Purpose and Applicability of Storage Tank Regulations

Many businesses utilize underground storage tanks (USTs), aboveground storage tanks (ASTs), or both in their day-to-day operations. The storage and handling of products such as gasoline, diesel fuel, fuel oils, and other liquid chemicals can have environmental and safety consequences if the tanks are not properly installed and maintained. Also, the product transfer operations must be properly managed to minimize the possibility of releases and possible fire hazards. Storage tank regulations were designed to promote the safe storage and handling of flammable and combustible liquids such as petroleum products and other hazardous substances. Following the regulations will promote safer storage and handling practices and result in economic benefits to manufacturers and consumers.

Agencies and Their Laws and Rules

Indiana Department of Homeland Security

The Indiana Department of Homeland Security's Division of Fire and Building Safety provides the authority for promulgating rules to implement fire prevention programs within the state to protect persons and properties from exposures to the dangers of fire or explosions. There are regulated products that are recognized as presenting the greatest fire hazard. Release(s) of these products could result in major adverse impacts to the environment. Division of Fire and Building Safety staff can be reached at (317) 232-2222. The division's Web site is at www.IN.gov/dhs/2843.htm.

Indiana Department of Environmental Management

The Compliance and Response Branch of IDEM's Office of Land Quality implements the following regulatory requirements:

- Title 40, Part 280 of the Code of Federal Regulations;
- Title 327, Article 2, Rule 10, Section 1 of the Indiana Administrative Code; and
- Title 329, Article 9 of the Indiana Administrative Code.

Branch staff can be reached at (800) 451-6027, ext. 8-3024 or (317) 308-3024.

IDEM's Underground Storage Tank Program within the Compliance and Response Branch is responsible for ensuring that all regulated USTs meet the U.S. Environmental Protection Agency's and Indiana's requirements for release detection, spill and overflow prevention and corrosion protection, and for ensuring that tanks not meeting those requirements are properly closed. The program educates and assists UST owners and operators in order to encourage and promote voluntary compliance.

Indiana Department of Labor

The Indiana Department of Labor's Indiana Occupational Safety and Health Administration also regulates underground storage tanks. The IOSHA Division can be reached at (317) 232-2655 or on the Internet at www.dol.IN.gov/2755.htm. Regulatory requirements for USTs are found in 40 CFR 1910.106(b)(3), Subpart H (Hazardous Materials), and regulatory requirements for aboveground storage tanks are found in 40 CFR 1910.106(b)(2).

The rules for storage and handling of flammable and combustible liquids provide fire prevention and environmental protection regulations for aboveground storage tanks.

The liquified petroleum gases rules adopt by reference *National Fire Protection Association 58: Liquified Petroleum Gas Code* (1998 edition) and provide the regulatory requirements for the storage of liquefied gases, such as propane, propylene, butane, and butylene, including their isomers. These are flammable gases under normal temperature and pressure. The gases are usually stored under pressure, causing them to become liquid. If the gases are released, they will vaporize to more than 270 times the liquid volume. A major release of these gases could result in explosion, fires, and significant air pollution encompassing a large area of land.

Liquefied petroleum gases are usually stored in ASTs that are designed for higher working pressures under the American Society of Mechanical Engineers (ASME) Code. These aboveground storage tanks are designated as pressure vessels. Local fire departments also regulate the storage and handling of flammable and combustible liquids.

Spill Prevention, Control and Countermeasure (SPCC) Plans

Section 311 of the Clean Water Act addresses pollution from oil and hazardous substance releases, providing U.S. EPA with the authority to establish a program for preventing, preparing for, and responding to oil spills that occur in navigable waters of the United States. U.S. EPA's oil spill program is run by the Office of Emergency Management. The program includes regulations for notifying authorities of oil discharges; the oil spill prevention, control, and countermeasures (SPCC) program; and the Facility Response Program.

The SPCC program applies to non-transportation-related facilities that have a large oil storage capacity (a total aboveground storage capacity of greater than 1,320 gallons or

a total underground storage capacity of over 42,000 gallons) that could reasonably be expected to discharge oil into navigable waters of the United States. SPCC regulations require each owner or operator of a regulated facility to prepare an SPCC plan. The SPCC plan must address the facility's design, operation, and maintenance procedures established to prevent spills from occurring, as well as countermeasures to control, contain, clean up, and mitigate the effects of an oil spill that could affect navigable waters. Exemptions from SPCC plan requirements include completely buried storage tanks subject to all of the technical requirements of the UST regulations (40 CFR Parts 280 or 281); and portions of certain facilities or any facility used exclusively for wastewater treatment. In October 2007, U.S. EPA's administrator signed a proposed rule to amend the SPCC rule. For more information, refer to U.S. EPA's Web site at www.epa.gov/emergencies/content/spcc/spcc_oct07.htm.

Call IDEM's Compliance and Technical Assistance Program at (317) 232-8172 or (800) 988-7901 for more guidance or view U.S. EPA's SPCC guidance manual on the Web at www.epa.gov/emergencies/docs/oil/spcc/spccbluebroch2002.pdf.

Underground Storage Tanks

Regulated underground storage tanks (USTs) are big containers placed underground to hold liquids, such as petroleum products and hazardous substances. IDEM closely regulates USTs because leaking tanks can contaminate soil and ground water. Aboveground storage tanks (ASTs) are regulated by the Indiana Office of the State Fire Marshal. These regulations only pertain to regulated USTs. A regulated UST is defined as a UST or combination of USTs and underground connected piping that have at least 10 percent of their volume underground and are, or have been, used to contain a regulated substance.

A *regulated substance* is defined as:

- A petroleum-based product or solvent; or
- Any chemical included on the hazardous substance list in the federal Comprehensive Environmental Response, Compensation, and Liability Act.

Gasoline and ethylene glycol are examples of regulated substances.

Unregulated underground storage tanks include:

- Any UST system holding:
  - Hazardous wastes regulated under Subtitle C (Title 42, Sections 6921 through 6939b of the United States Code [U.S.C.]) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996; or
  - A mixture of such hazardous waste and other regulated substances.

- Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 (33 U.S.C. 1342) or 307(b) (33 U.S.C. 1317(b)) of the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., in effect on October 31, 1994.
- Equipment or machinery that contains regulated substances for operational purposes and that may include any of the following:
  - Hydraulic lift tanks; or
  - Electrical equipment tanks.
- Any UST system whose capacity is 110 gallons or less, except that an owner and operator with two or more UST systems on-site whose individual capacities are 110 gallons or less is not excluded if the total capacity of all tanks on-site containing the same product exceeds 110 gallons.
- Any UST system that contains a *de-minimis* concentration of regulated substances.
- Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

Regulations in 329 IAC 9-2 through 329 IAC 9-4, 329 IAC 9-6, and 329 IAC 9-7 do not apply to any of the following types of UST systems:

- Wastewater treatment tank systems.
- Any UST system containing radioactive material that is regulated under the Atomic Energy Act of 1954, 42 U.S.C. 2011, et seq., as amended, in effect on April 26, 1996.
- Any UST system that is part of an emergency generator system at a nuclear power generation facility regulated by the Nuclear Regulatory Commission under 10 CFR 50, Appendix A.
- Airport hydrant fuel distribution systems.
- UST systems with field-constructed tanks.

329 IAC 9-7 does not apply to any UST system that stores fuel solely for use by emergency power generators.

The following tanks are exempted under IC 13-11-2-241:

1. A farm or residential tank with a capacity of not more than 1,100 gallons that is used for storing motor fuel for noncommercial purposes.
2. A tank used for storing heating oil for consumptive use on the premises on which the tank is stored.

3. A septic tank.
4. A pipeline facility, including gathering lines, that:
   a. Is regulated under the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. 1671 et seq.);
   b. Is regulated under the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. 60101 et seq.); or
   c. Is an intrastate pipeline facility regulated under state laws comparable to the laws identified in clauses (A) through (B).
5. A surface impoundment, pit, pond, or lagoon.
6. A storm water or wastewater collection system.
7. A flow-through process tank.
8. A liquid trap or associated gathering lines directly related to oil or gas production and gathering operations.
9. A storage tank situated in an underground area such as:
   a. A basement;
   b. A cellar;
   c. A mineworking;
   d. A drift;
   e. A shaft; or
   f. A tunnel;
   if the storage tank is situated upon or above the surface of the floor.
10. Any other tank exempted by a rule adopted by the Solid Waste Management Board in accordance with regulations adopted by the administrator of U.S. EPA.
11. A pipe connected to a tank described in subdivisions (1) through (10).

Regulated vs. Unregulated UST Status

If you are unable to determine the status of a UST after consulting the applicable regulations, contact IDEM's UST Program at (317) 308-3039 or (800) 451-6027, ext. 308-3039.

Registration

All regulated USTs must be properly registered with IDEM's UST Program. To register a tank or tank system, you must complete a Notification for Underground Storage Tanks (State Form 45223), within 30 days when UST systems are:

1. Brought into service;
2. Acquired by a new owner; and/or

3. Upgraded (tank lining, piping replacement, leak detection system or equipment installation, spill/overfill prevention equipment, or corrosion protection) or repaired (restoration of a tank or UST system component that has caused or could potentially cause a release of product from the UST system).

State Form 45223 is available at www.icpr.IN.gov/webfile/formsdiv/45223.doc.

Tank Fees

Introduction

The Underground Storage Tank Fee Assessment Program was established in 1989 to collect tank fees from owners of regulated USTs. IDEM's UST Program obtains fee assessment information on owners, facilities, and tanks from IDEM's UST database. The database information is gathered from State Form 45223, which is submitted by owners and operators. If there have been any changes in any UST facility since the last notification submittal (e.g., a tank has been permanently closed at a facility), this change should be indicated on State Form 45223 in order for an accurate fee assessment to be made. For questions regarding why a tank fee was assessed, contact IDEM's UST Program at (317) 308-3039 or (800) 451-6027, ext. 308-3039.

Fee Assessment Amounts and Use of Fee Monies

The current fee is $90 per year for regulated petroleum tanks and $245 per year for hazardous substance tanks. The collected fee monies are divided among three funds: Excess Liability Fund, Petroleum Trust Fund, and the Hazardous Substances Response Trust Fund. The Excess Liability Fund provides financial assurance for tank owners and operators and reimburses them for cleanup of their sites. In addition to cleanup costs, administrative costs of the Excess Liability Fund program are taken from this fund. The Petroleum Trust Fund pays for state-funded cleanup of leaking or abandoned petroleum USTs. UST program administrative costs also come from this fund. The Hazardous Substances Response Trust Fund funds expenses related to releases other than petroleum from regulated USTs.

The Fee Assessment Period

Currently, the fee assessment period is for July 1 of each year through June 30 of the following year. IDEM coordinates the fee assessment program with the Indiana Department of Revenue's Special Tax Division. Although the assessment period begins on July 1, the Special Tax Division does not mail invoices until the fall of the year. Receipt of payment is due no sooner than 30 days after the assessment date. This due date is specified on each year's invoices (UST-1 Form). For questions regarding the processing of a payment, the Indiana Department of Revenue should be contacted at (317) 233-3028.

Fee Payment

Payment of tank fees can be made in two ways:

1. Payment may be made in full on the due date specified on the invoice (UST-1 Form); or
2. For owners whose tank fee exceeds $500, payment may be made in four equal installments. The applicable payment portion of the voucher sheet (UST-2 Form) must be included with each installment payment.

Existing Installations

The UST system must be protected from potential releases and monitored. Without these safeguards in place, the UST is more likely to leak, damage the environment, and result in costly cleanups. USTs that are not in compliance with the December 22, 1988 upgrade requirements of corrosion protection, overfill prevention, release detection, and spill prevention must have been closed or replaced by December 22, 1998. Closure may occur by removing the UST or filling the UST with inert material if removal threatens a structure.

New Installations

The requirements for spill protection, overfill prevention, corrosion protection, and release detection must be met at the time of installation. State Form 45223 must be completed and submitted with the site diagram.

Tank Closure

In order to close a UST system in Indiana the following regulations and recommended practices must be followed:

- 40 CFR 280 (federal regulations);
- 329 IAC 9 (state regulations);
- 675 IAC 79 (Indiana Fire Prevention Code); and
- Recommended Practice API-1604 (American Petroleum Institute).

There are two categories of closures for UST systems that are allowed—temporary and permanent.

Temporary Closure

A temporary closure is allowed indefinitely if the UST system is intended to be brought back into service at a future date. To temporarily close a UST system, you must submit State Form 45223 requesting closure. You must also continue operating the corrosion protection and release detection systems, if applicable. Release detection is not required if the UST system is empty. The UST system must pass tank and line tightness testing. Temporary closure is allowable only for compliant USTs.

Permanent Closure

A UST system is considered permanently closed when the UST system is made unregulated. Permanent closure includes in-place closure, change-in-service, and removal.

A permanently closed UST system must be emptied and cleaned by removing all liquids and accumulated sludge, and purged of all vapors. If this liquid and sludge is characterized as hazardous waste and there is enough volume to cause a change in your hazardous waste generator status for the month(s) the liquid is shipped off-site, you must renotify IDEM's UST Program and meet all applicable hazardous waste requirements for the applicable generator status.

All permanently closed UST systems must be removed from the ground (with the exception of change-in service and in-place closure), and IDEM's UST Program must be notified of the pending removal by submitting State Form 45223 requesting closure at least 30 days prior to the pending removal date.

In-Place Closure

If actual removal is extremely difficult (e.g., a UST is found underneath or near building foundations), the UST system may be closed in-place. A closed in-place UST must be filled with an inert solid material, such as concrete or pea gravel. A site assessment must also be performed.

Change-In-Service

A UST system change-in-service is required if the UST will continue to be used but will hold an unregulated substance.

In addition to the requirements for UST system removal, the following is required when performing an in-place closure or change-in-service:

- An in-place closure requires written approval from both IDEM and the Office of the Indiana State Fire Marshall, but for a change-in-service written approval is required only from IDEM (approval letters must be kept on site at all times during closure).
- A sampling plan must be submitted to IDEM's UST Program before closure approval will be granted.
- An in-place closure or a change-in-service may not begin until written approval from IDEM's UST Program has been received by the owner.

Removal

- All UST systems to be closed must have been registered with IDEM's UST Program by completing State Form 45223.
- Notification of intent to close must be given using State Form 45223 at least 30 days before closure activity begins.
- IDEM's UST Program will respond in writing with the closure approval date (closure approval letter will expire 90 days after the start date given).
- The closure approval letter must be kept on site at all times.
- A contractor or individual certified through the Indiana Office of the State Fire Marshal must be used for closure (at least one certified person must be on site at all times).
- In addition to the 30 day notice, you must also notify IDEM's UST Program by phone at least 14 days prior to the intended closure date. Contact IDEM staff at (317) 308-3039 or (800) 451-6027, ext. 308-3039.
- Also at least 14 days before closure, both the Office of the State Fire Marshal and local fire department must be notified.
- A UST system closure site assessment must be performed to determine if contamination is present.
- Within 30 days after permanent closure, both a completed State Form 45223 and a UST system closure report must be filed together with IDEM's UST Program. This will stop assessment of annual UST system fees for permanently closed UST systems.

Waiver for Advance Notification of Closure

If a permanent closure is determined necessary due to a release or leak from an UST system, then a waiver of the 30-day advance notification period may be granted. All UST systems must be registered with IDEM's UST Program prior to waiver approval. The following apply when requesting a waiver:

- An IDEM spill/leaking underground storage tank incident number is required before a waiver is given. Contact IDEM at (317) 232-8900 or (800) 451-6027, ext. 2-8900 to obtain a spill/incident number.
- The Office of the State Fire Marshall and local fire department must be notified prior to closure.
- Within 30 days following closure, a completed State Form 45223 and one copy of the UST system closure site assessment report must be sent together to IDEM's UST Program.

For unregistered UST systems (i.e., systems whose presence was previously unknown) that are discovered:

- Prior to Closure Request:
  1. If unregulated, notification to IDEM is not required.
  2. If regulated, include information about the UST on State Form 45223 when requesting closure and IDEM will assign a Facility ID number.

- During UST Closure Approved by IDEM:
  1. If unregulated, include known information about the UST in the UST system closure report submitted to IDEM; environmental sampling is not required.
  2. If regulated, conduct closure activities as required and include information in the UST system closure report submitted to IDEM. IDEM does not need to be notified at the time of discovery of the UST.

- During Construction:
  1. If unregulated, include known information about the UST in the UST system closure report submitted to IDEM; environmental sampling is not required.
  2. If regulated, contact IDEM's UST Program for a waiver of the 30-day advance notification of closure. When a waiver is granted, conduct closure activities as required and include information in the UST system closure report.

During any closure, if a release is discovered, it must be reported to IDEM within 24 hours at (317) 232-8900 or (800) 451-6027 ext. 2-8900. If any emergency conditions exist (vapors found in buildings, drinking water source impacted, or free product present, etc.), then owners or operators must report this immediately to IDEM's 24-Hour Emergency Spill Line at (317) 233-7745 or (888) 233-7745 (toll free nationwide).

Closure Report

A closure report, including environmental sampling as described in 329 IAC 9-6, is required for all UST system closures and must be sent to IDEM's UST Program to ensure timely review. The site assessment must be designed to detect all possible environmental contamination caused by a UST system. The closure report must be submitted to IDEM's UST Program within 30 days of tank closure. IDEM's UST Program will review each closure report and supply the owner of the tanks with a system closure report review checklist (SCRRC) within six months of receipt of the UST closure report. The SCRRC will document what areas have been sufficiently completed and those that are insufficient and require further documentation.

Required Contents of Closure Report

1. Responsible Party:
    a. The UST system facility's owner/operator name, IDEM owner I.D. number (if known), address, and phone number;
    b. The name of the UST system facility contact person, owner/operator affiliation, phone number; and
    c. Past owner/operators for the past 25 years.

2. UST Contractor:
    a. UST closure contractor company name and address; and
    b. Name and Office of the State Fire Marshal certification number of person(s) on site during closure.

3. UST Site:
    a. Facility name, IDEM facility I.D. number (if known), address and phone number;
    b. Type of facility (past and current) operation;
    c. Coverage (turf, concrete, asphalt, etc.);
    d. History of any spill reports, by incident number;
    e. Site proximity to both human and environmentally sensitive areas (all site surroundings);
    f. Site soil texture, (i.e., percent of sand, silt, and clay [natural soil, not backfill soil]); and
    g. Site specific map(s) with appropriate scale and legends to show site details described below:
        i. Illustrated legends and compass directions at appropriate scale;
        ii. Drainage features (surface slope/surface water runoff direction);
        iii. Identified aboveground features (buildings, roadways, man ways, pump islands, utility and property lines,);
        iv. Identified subsurface features (tanks and excavation pit, piping, utility conduits, etc.);
        v. Locations of samples (S1, S2), soil borings (SB1, SB2), and monitoring wells (MW1, MW2);
        vi. Location of previously closed tanks (if applicable); and
        vii. Site surroundings (adjacent buildings/business descriptions).

4. Underground Storage Tank(s):

    The following information refers to the tank(s) being closed:

    a. Number and volume of tank(s);
    b. Past and present contents of tank(s);

c. Construction material of tank(s);
d. Age and installation dates of tank(s);
e. Leak detection methods used;
f. Records of tank tightness test results (most current);
g. Records of any other leak detection method results most current (inventory records, groundwater or vapor monitoring results); and
h. Information on any previously closed UST systems (date closed, number, size, and product stored).

5. Sample Results:

a. Data from analysis of soil samples (such as total petroleum hydrocarbons) presented in a tabular format;
b. Data from analysis of water samples (such as benzene, toluene, ethylbenzene, xylene [BTEX]) presented in a tabular format;
c. A signed laboratory certificate of analysis listing analysis method, preparation method, date of sample receipt, and date of analysis;
d. Proper sample numbers for cross reference to UST site maps;
e. Chain of custody documentation and data from analysis of soil and water samples for other miscellaneous parameters (lead, and other metals);
f. Decontamination procedures/sampling procedures and techniques; and
g. Data from analysis of waste oil sampling (if applicable).

6. Miscellaneous Closure Documentation (must include manifests and/or receipts):

a. Soil and water disposal documentation;
b. Remaining product and sludge documentation;
c. Tank and piping disposal documentation;
d. Previous owner history (past 25 years); and
e. Leaking Underground Storage Tank Referral Sheet for closure.

Leaking Underground Storage Tank (LUST) Referral

All sites with contamination must fill out a LUST Referral Sheet (including contaminated backfill sites and sites where over-excavation takes place). When reporting a confirmed release, the following basic information is required:

- Location of the release;
- Knowledge of the release;
- Affected area(s); and
- Site-specific information, as needed.

The following circumstances require notification to IDEM's LUST program:

- Soil contamination levels of greater than the detection limit of 20 ppm total petroleum hydrocarbons;

- Ground water contamination greater than the appropriate method detection limit;
- Free product is present;
- Contamination is found in conduits such as utility lines or sewers; and/or
- Vapors are detected in a building.

Contact IDEM's LUST Program at (800) 451-6027, ext. 2-8900 or (317) 232-8900 during normal business hours or (888) 233-7745 (toll free nationwide) or (317) 233-7745 after hours. You can fax the LUST Initial Incident Report Form to (317) 234-0428 or e-mail it to LeakingUST@idem.IN.gov. This form is available on IDEM's Web site at www.idem.IN.gov/4999.htm.

If a release is confirmed from a LUST, under most circumstances the nature and extent of contamination must be determined and corrective action is required. When reporting a release, the owner/operator should seek guidance regarding the necessary next steps. The following reports and plans are required:

- Initial abatement report (only if conditions exist, such as drinking water impacts, free product, impacts to conduits, or vapors in a building);
- Free product removal report, submitted within 45 days (only if free product is present);
- Initial site characterization report, submitted within 45 days;
- Further site investigation, as required;
- Corrective action plan, as required; and
- Corrective action progress reports, as required.

Document Submittal

All documents required by IDEM's UST Program must include an original signature in ink by the owner/operator or authorized representative. If an owner/operator authorizes a representative to sign forms, then a document must be submitted to authorize that representative. This document must include the following:

- Owner name signed in ink;
- UST system facility name and address;
- Representative's name and address; and
- Documents the representative is authorized to sign. A copy of the authorization must accompany each document submitted.

The contractor must also sign and provide the Office of the State Fire Marshal the certification number on State Form 45223 for tank installations, upgrades, testing, and permanent closures.

Recordkeeping Requirements

It is important to keep records of your daily operations, purchases of equipment, and other information relating to the operation of your UST system. These records are needed by the inspector and might also help you obtain lower insurance rates. Records must be kept on routine maintenance of the UST system, release detection, inventory control, site assessment results, reporting of releases, and corrective actions. These records should be kept on-site and be immediately available upon request. If the records are kept at an alternative site, they must be available for inspection. It is recommended you keep these records indefinitely.

Releases: Reporting and Investigation

Within twenty-four (24) hours of detecting a release from an underground storage tank, the owner and/or operator must:

- Report the release to IDEM's Spill Emergency Hotline at (317) 233-7745 or (888) 233-7745 (toll free nationwide);
- Take immediate action to prevent any further release; and
- Identify and eliminate any fire, explosion, or vapor hazards.

Some of the other measures the owner/operator must take are preventing further releases into the environment and, to the extent possible, preventing further migration (movement away from the tank site) of any released material. For more information on what to do if you think your home might be affected by a LUST, call (800) 451-6027, ext. 2-8900 or (317) 232-8900 or visit IDEM's Web site at www.idem.IN.gov/5067.htm.

Within 45 days of a release from an underground storage tank, the owner/operator must submit a site characterization report to IDEM. This report must include information about where and how much contamination is found in the soil and ground water, as well as an analysis of potential exposure to people or the environment. Afterward, the owner/operator must submit a corrective action plan for responding to any contamination of the soil and groundwater caused by the release.

IDEM will approve the corrective action plan only after determining that it will adequately protect human health and the environment. Afterward, the owner/operator will carry out the cleanup plan and notify IDEM on their progress. The cleanup must continue until contamination is reduced to a safe level.

Corrective Action

Release response and corrective action by owners and operators of petroleum or hazardous substance UST systems must, in response to a confirmed release from the UST system, comply with the requirements of 329 IAC 9-5-1 as follows:

1. Initial Response:

   Upon confirmation of a release or after a release from the UST system is identified in any other manner, owners and operators must perform the following initial response actions within 24 hours or within a reasonable time period specified by IDEM:

   a. Report the release to IDEM;
   b. Take immediate action to prevent any further release of the regulated substance into the environment; and
   c. Identify and mitigate fire, explosion, and vapor hazards.

2. Initial Abatement Measures and Site Check (329 IAC 9-5-3):

   Owners and operators must perform the following abatement measures:

   a. Remove as much of the regulated substance to prevent further release to the environment;
   b. Visually inspect any aboveground releases or exposed underground releases and prevent further migration of the released substance into surrounding soils and groundwater;
   c. Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the underground storage tank excavation zone and entered into subsurface structures (such as sewers or basements);
   d. Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner and operator must comply with applicable state and local requirements;
   e. Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site check required by 329 IAC 9-4-3(2) or the closure site assessment of 329 IAC 9-6-2(a). In selecting sample types, sample locations, and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill, depth to ground water, and other factors as appropriate for identifying the presence and source of the release; and
   f. Investigate to determine the possible presence of free product and begin free product removal as soon as practicable.

Within 20 days after release confirmation, owners and operators must submit a report to IDEM's LUST Program summarizing the initial abatement steps and any resulting information or data.

3. Initial Site Characterization:

   Owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures. This information must include, but is not necessarily limited to, the following:

   a. Data on the nature and estimated quantity of release;
   b. Data from available sources and/or site investigations concerning the following factors:

      1. Surrounding populations;
      2. Water quality;
      3. Use and approximate locations of wells potentially affected by the release;
      4. Subsurface soil conditions;
      5. Locations of subsurface sewers;
      6. Climatological conditions; and
      7. Land use;

   c. Results of the site check required under 329 IAC 9-6-3(a)(5);
   d. Results of the free product investigations required under 329 IAC 9-6-3(a)(6), to be used by owners and operators to determine whether free product must be recovered under 329 IAC 9-6-5; and
   e. Known or expected extent of contamination.

Within 45 days of release confirmation, owners and operators must submit to IDEM the information collected in a manner that demonstrates its applicability and technical adequacy or in a format and according to a schedule required by the agency.

Free Product Removal

At sites where investigations under 329 IAC 9-6-3(a)(6) indicate the presence of free product, owners and operators must remove free product to the maximum extent practicable as determined by the commissioner of IDEM, while continuing, as necessary, actions initiated under 329 IAC 9-6-2 through 329 IAC 9-6-4, or preparing for actions required under 329 IAC 9-6-6 and 329 IAC 9-6-7. In meeting the requirements of this section, owners and operators must do the following:

a. Conduct free product removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site and that properly treats, discharges, or disposes of recovery products and byproducts in compliance with applicable local, state and federal regulations;
b. Use abatement of free product migration as a minimum objective for the design of the free product removal system;

c. Handle any flammable products in a safe and competent manner to prevent fires or explosions in accordance with the site health and safety plan as required by 329 IAC 9-6-7(e); and
d. Unless directed to do otherwise by the commissioner of IDEM, prepare and submit to IDEM, within 45 days after confirming a release, a free product removal report that provides at least the following information:
    1. Name of the person responsible for implementing the free product removal measures;
    2. The estimated quantity, type, and thickness of free product observed or measured in wells, bore holes, and excavations;
    3. The type of free product recovery system used;
    4. Whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located;
    5. The type of treatment applied to, and the effluent quality expected from, any discharge;
    6. The steps that have been or are being taken, to obtain necessary permits for any discharge; and
    7. The disposition of the recovered free product.

Investigations for Soil and Groundwater Cleanup

To determine the full extent and location of soils contaminated by the release, presence, and concentrations of dissolved product contamination of the ground water, the owner and operator shall conduct investigations of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

a. There is evidence that groundwater wells have been affected by the release. This evidence may include any product found during release confirmation or previous corrective action measures;
b. Free product is found to need recovery in compliance with section 329 IAC 9-6-5;
c. There is evidence that contaminated soils may be in contact with groundwater. This evidence may include any found while conducting the initial response measures or investigations required under 329 IAC 9-6-1 through 329 IAC 9-6-5.1; and
d. The IDEM commissioner requests an investigation based on the potential effects of contaminated soil or groundwater on nearby surface water and groundwater resources.

The owner and operator shall submit the information collected as soon as practicable or in accordance with a schedule established by the IDEM commissioner.

Corrective Action Plan (CAP)

At any point after reviewing the information submitted in compliance with 329 IAC 9-6-1 through 329 IAC 9-6-4, the IDEM commissioner may require the owner and operator to submit additional information or develop and submit a CAP for responding to contaminated soils and groundwater. If a plan is required, the owner and operator shall submit the plan according to a schedule and format established by the IDEM commissioner. Alternatively, the owner and operator may, after fulfilling the requirements of 329 IAC 9-6-2 through 329 IAC 9-6-4, choose to submit a CAP for responding to contaminated soil and groundwater. In either case, the owner and operator are responsible for submitting a plan that provides for adequate protection of human health and the environment, as determined by the IDEM commissioner, and shall modify their plan as necessary to meet this standard.

The IDEM commissioner will approve the CAP only after ensuring that implementation of the plan will adequately protect human health, safety and the environment. In making this determination, the IDEM commissioner shall consider the following factors:

a. The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration;
b. The hydrogeologic characteristics of the facility and the surrounding area; and
c. The proximity, quality, and current and future uses of nearby surface water and groundwater.

Public Participation

For each confirmed release that requires a corrective action plan, the IDEM commissioner shall provide notice to the public in a manner designed to reach those members of the public directly affected by the release and the planned corrective action. This notice may include any of the following:

a. Public notice in local newspapers;
b. Block advertisements;
c. Public service announcements;
d. Publication in the Indiana Register;
e. Letters to individual households; or
f. Personal contacts by field staff.

The IDEM commissioner shall ensure that site release information and decisions concerning the CAP are made available to the public for inspection upon request. Before approving a CAP, the IDEM commissioner may hold a public meeting to consider comments on the proposed corrective action plan if there is sufficient public interest, or for any other reason. The IDEM commissioner shall give public notice if implementation of an approved corrective action plan does not achieve the established cleanup levels in the plan and termination of the plan is under consideration.

Aboveground Storage Tanks

Aboveground storage tanks (ASTs) are often used for the same purposes as USTs. An AST system has less than 10 percent of the volume of the storage tank system underground. While AST systems do not pose the same environmental or human health risks as USTs, the impacts may be significant if their contents are accidentally released. One advantage of ASTs is that they are highly visible so any leaks or defects can be detected early. IDEM's UST Program and the Office of the State Fire Marshal regulate ASTs that are used to store flammable and combustible liquids.

Installation of Aboveground Storage Tanks

According to Appendix 1-B of the Uniform Fire Code (UFC), *Protection of Flammable and Combustible Liquid*, supports, foundations, and anchorage for ASTs shall be in accordance with Section 7902.1.14 of the UFC.

Tanks at Grade

Tanks shall rest on the ground or foundations made of concrete, masonry, piling or steel. Tank foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.

Tanks Above Grade

Tanks shall be securely supported. Supports for tanks storing Class I, II, or III-A liquids shall be of concrete, masonry or protected steel. Single wood timber supports, not cribbing, laid horizontally, are allowed for outside ASTs when the bottom of the tank is not more than 12 inches (304.8 mm) above grade. Design of supports: Supports shall have a fire resistive rating of not less than two hours. Design shall be in accordance with well-established engineering principles of mechanics and shall be in accordance with the building codes.

Stairs, Platforms and Walkways

Stairs, platforms and walkways shall be of non-combustible construction and shall be designed and constructed in accordance with the building codes.

Stationary Aboveground Tanks Outside Buildings

Per Uniform Fire Code, Section 7902.2, aboveground tanks outside of buildings are prohibited within the limits established by law as the limits of districts in which such storage is prohibited (see sample adoption ordinance, Section 4 of the UFC).

Separation Between Adjacent Tanks Containing Unstable Liquids

Per UFC Section 7902.2.3.1, the separation between tanks containing unstable liquids shall not be less than one half the sum of their diameters.

Separation Between Adjacent Tanks Containing Flammable or Combustible Liquids and Liquified Petroleum (LP) gas

Per UFC Section 7902.2.3.3, the minimum horizontal separation between an LP-gas container and a Class I, II or III-A liquid storage tank shall be 20 feet, except in the case of Class I, II or III-A liquid tanks operating at pressures exceeding 2.5 psig (17.2 kPa) or equipped with emergency venting allowing pressures to exceed 2.5 psig (17.2 kPa), in which case the provisions of UFC Section 7902.2.3.1 shall apply. Suitable means shall be provided to prevent the accumulation of Class I, II or III-A liquids under adjacent LP-gas containers such as by dikes, diversion curbs or grading. When flammable or combustible liquid storage tanks are within a diked area, the LP-gas containers shall be outside the diked area and at least 10 feet away from the centerline of the wall of the diked area.

Foam Fire Protection

Foam fire protection shall be provided for ASTs, other than pressure tanks operating at or above one psig when such tank, or group of tanks spaced less than 50 feet apart measured shell to shell, has a liquid surface area in excess of 1,500 square feet and:

1. Is used for storage of Class I or II liquids;
2. Is used for storage of crude oil;
3. Is used for in-process products and is located within 100 feet of a fired still, heater, related fractioning or processing apparatus or similar device at a processing plant or petroleum refinery as herein defined; or
4. Presents an unusual exposure hazard because of topographical conditions, nature of occupancy, proximity on the same or adjoining property, height and character of liquids to be stored, degree of private fire protection to be provided and facilities of the fire department to cope with flammable liquid fires.

When foam fire protection is required, installation shall be in accordance with UFC Standard 79-1. The foam is to be stored on site at all times.

Emergency Relief Venting for Stationary Tanks

Per UFC Section 7902.2.6, stationary tanks shall be equipped with adequate additional venting that will relieve excessive internal pressure caused by exposure to fires.

Type of Venting Device

Per UFC Section 7902.2.6.2, ASTs shall be provided with construction or devices that will relieve excessive internal pressure caused by exposure fires. Construction methods such

as floating roofs, lifter roofs, weak roof-shell seams or other approved pressure-relieving construction are allowed as methods providing emergency relief venting. Weak roof-shell seams shall be constructed to fail before any other seam.

Devices such as self-closing manhole covers, covers using long bolts that allow the cover to lift under internal pressure, and additional or larger relief valve or valves or rupture disks are allowed for emergency relief venting. Such devices shall be approved.

Secondary Containment – Diked Areas and Walls

Most ASTs must have secondary containment. Several containment systems are acceptable: tanks with built in secondary containment, vaulted systems, concrete encasement, and lightweight thermal insulated tanks.

Dikes

Per UFC Section 7902.2.8.3, protection of adjacent tanks, adjoining property or waterways is accomplished by retaining the liquid around the tank by means of a diked area. Such diked areas shall comply with UFC Section 7902.2.8.3.

Walls

Per UFC Section 7902.2.8.3.3, walls of the diked area shall be of earth, steel, concrete, or solid masonry designed to be liquid tight and to withstand a full hydrostatic head. Earthen walls three feet or more in height shall have a flat section at the tip not less than two feet wide. The slope shall be consistent with the angle of repose of the material of which the walls are constructed, restricted to an average height of six feet above the interior grade.

Volumetric Capacity

Per UFC Section 7902.2.8.3.2, the volumetric capacity of the diked area shall not be less than the greatest amount of liquid that can be released from the largest tank with the diked area. The capacity of the diked area enclosing more than one tank shall be calculated by deducting the volume of the tanks other than the largest tank below the height of the dike.

Equipment, Controls and Piping in Diked Areas

Per UFC Section 7902.2.8.3.8, pumps, manifolds, and fire-protection equipment or controls shall not be located within diked areas or drainage basins or in a location where such equipment and controls would be endangered by fire in the diked area or drainage basin. Piping above ground shall be minimized and located as close as practical to the shell of the tank in diked areas or drainage basins.

Secondary Containment Requirements for Facilities Storing Liquid Hazardous Materials

327 IAC 2-10-1 (final adopted May 13, 1998) provides the requirements for secondary containment structures and spill response plans for the purpose of preventing released hazardous materials from entering surface water or ground water at facilities storing liquid hazardous materials in an aboveground storage tank or storage area, or operating a transfer area.

The regulation contains provisions regarding storage inside and outside of a building, hazardous material transfer areas, and requirements for spill response plans.

This rule applies to owners or operators of a facility storing liquid hazardous materials in an aboveground storage tank or storage area or operating a transfer area for liquid hazardous materials if the aboveground tank, storage area, or transfer area is constructed after the effective date of this rule and includes:

1. Construction planned after the effective date of this rule; or
2. Construction planned before the effective date of this rule only when physical construction did not begin within ninety (90) days after the effective date of this rule.

An existing aboveground storage tank, storage area, or transfer area must be brought into compliance with this rule when replaced or relocated. For a list of exclusions to this regulation, please refer to 327 IAC 2-10-3 at www.legislative.IN.gov/iac.

Corrosion Protection

Most ASTs must have corrosion protection. A single- or double-bottom shop-manufactured tank that has an external mastic-coated bottom can only be installed on a concrete or asphalt pad. Cathodic protection that is properly engineered and maintained must be used for the exterior of single- or double-bottom tanks that are installed on earth and gravel. Also, cathodic protection can be used on single- or double-bottom tanks that are installed on a concrete or asphalt pad.

Control of Ignition Sources

ASTs, as regulated, have fire hazards. Precautions should be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to: open flames, cutting and welding, thermal heat, spontaneous ignition, stray currents, smoking, etc. All equipment such as tanks, machinery, and piping, must be bonded or otherwise connected to the ground to prevent static electricity.

AST System Out-of-Service

An AST system that is going to be out-of-service for more than 12 months must follow the proper procedures. The AST system owner/operator is required to have the tank and related piping completely emptied and professionally cleaned to a vapor free condition. The piping must be disconnected from the AST system. The AST system must also be safeguarded against trespass. The owner/operator has the option of removing the tank system from the property. All tanks removed from the property must be disposed of properly.

Releases, Reporting and Investigation

Releases or suspected releases of a regulated substance from flammable and combustible liquid ASTs and heating oil ASTs (if greater than 1,000 gallon capacity) must be reported to IDEM's Emergency Response Branch at (317) 233-7745 or (888) 233-7745 (toll free nationwide). Some signs that a release has occurred are visibly stained soils, holes in the AST, and odiferous soils.

Emergency Planning and Training

You need to know what to do in case of a fire, spill, or any on-site emergency. An emergency action plan must be available and made known to employees to respond to fire or other emergencies. Alternate fire safety measures on-site must be in place while any fire safety equipment is shut down. The emergency plan should be coordinated with your local emergency response agencies, such as fire and police. In most cases, your local agencies will respond to your alarm or call. Without a proper emergency plan in place, you are likely to lose more products, increase your cleanup costs, and endanger human lives and the environment.

For More Information

Aboveground Storage Tanks	Indiana Department of Homeland Security *Division of Fire and Building Safety* (317) 232-2222 www.IN.gov/dhs/2843.htm
American Petroleum Institute	(202) 682-8000 www.API.org
Emergency Response	IDEM - Office of Land Quality *Emergency Response Section* 24-Hour Spill Reporting Hotline (317) 233-7745 or (888) 233-7745 (toll free nationwide) www.idem.IN.gov/4155.htm
Leaking Underground Storage Tanks	IDEM - Office of Land Quality *Leaking Underground Storage Tanks Section* (317) 232-8900 or (800) 451-6027, ext. 2-8900 www.idem.IN.gov/4997.htm
Underground Storage Tanks	IDEM - Office of Land Quality *Underground Storage Tank Section* (317) 308-3039 or (800) 451-6027, ext. 308-3039 www.idem.IN.gov/4999.htm